ABMA Update

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The individual components that go into a power transmission system such as gears, bearings, shafts, seals, fasteners, housings, or lubricant, all affect one another. A small tweak to the design of one may require a cascade of other design changes throughout the system. Because of this, the gear engineer should have some knowledge of the design of components besides gears. To that point, for this month's article, I'm taking a sidestep from writing about gears to give an update on bearings; components found in nearly every power transmission system.

In the United States, bearing standards are written by the American Bearing Manufacturers Association, ABMA. ABMA also represents the US bearing industry internationally on ISO standards writing committees. Organizationally, ABMA has one technical committee to manage a catalog of more than forty published standards and work on new standards projects.

For the last few years, the committee's main American standards work has been revising ABMA 8.2, *Rolling Element Bearings—Shaft Mounted—Locknuts, Sleeves, and Locking Devices—Inch Design.* This revision will fix errors from reformatting, including blurry tables and figures, and be a general update to current industry practices. The proposed new revision recently completed a General Ballot commenting period, in June 2023, and has a goal to be published before the end of the year.

The committee also recently reapproved the following 5 standards for another 10-year term of stabilized maintenance:

- ANSI/ABMA 4-1994, *Tolerance Definitions and Gauging Practices for Ball and Roller Bearings*
- ANSI/ABMA 7-1995, *Shaft and Housing Fits for Metric Radial Ball and Roller Bearings - Metric*
- ANSI/ABMA 18.1-1982, *Needle Roller Bearings Radial - Metric Design*
- ANSI/ABMA 18.2-1982, *Needle Roller Bearings Radial - Inch Design*
- ANSI/ABMA 26.2-1994, *Thin Section Ball Bearings - Inch Design*

On the ISO side, ABMA is most active in the Bearing Load Ratings and Life subcommittee of ISO Technical Committee 4. This subcommittee last met in May 2023 where they continued work on two active projects, approved two new projects, and discussed two potential future projects.

The longer-running active projects of the ISO subcommittee are:

- A revision to ISO 16281, *Rolling bearings—Methods for calculating the modified reference rating life for universally loaded bearings.*

and

- Creating a new standard called, ISO 17956, *Rolling bearings—Method for calculating the effective static safety factor for universally loaded rolling bearings.*

The recently approved projects in the ISO subcommittee are:

- A minor revision of ISO 281, *Rolling bearings—Dynamic load ratings and rating life,* which will address comments received from the industry.

and

- A revision to ISO/TR 1281-2, *Rolling bearings—Explanatory notes on ISO 281—Part 2: Modified rating life calculation, based on a systems approach to fatigue stresses,* to address industry comments on the document and bring the document in line with changes in ISO 281.

The potential topics for future ISO subcommittee projects are:

- The creation of a technical report to incorporate surface failure modes into bearing life.

and

- The collection of comments from member nations on oscillating/false brinelling to gauge if a document should be written on the subject.

Additional information on ABMA can be found in the Standards section of the ABMA website, https://www.americanbearings.org. ABMA is always looking for experts in the industry to contribute to bearings standards. For information about joining ABMA, or to ask ABMA standards questions, please contact the ABMA Technical Division at: *aboutaleb@americanbearings.org*